

# ARCHITECTURAL DRAFTING & DESIGN (ARCH)

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## ARCH1111 | Architectural Drawing | Studio (5 Credits)

Engage in a breadth of architectural representation and design technologies. Develop skills in architectural communication, professionalism, learning culture, and technological agility.

## ARCH1121 | The Site | Lecture (3 Credits)

Analyze the relationship between a building site and its physical, cultural, and environmental contexts. Develop technical abilities for site design and documentation.

## ARCH1131 | Building Systems | Lecture (3 Credits)

Analyze a breadth of building systems and their associative materials and assemblies. Analyze the basic principles of building structural and envelope systems.

## ARCH1141 | The Profession | Seminar (1 Credit)

Engage in the profession of architecture and acquire knowledge of architectural licensure, career paths, and forms of practice. Develop proficiency in professional communication and behavior.

## ARCH1211 | Construction Drawings | Studio (5 Credits)

Create and coordinate a set of construction drawings. Develop visual communication, organization, and time management skills. Explain and apply systems of building information management.

**Prerequisite(s):** ARCH1111

## ARCH1221 | Building Details | Lecture (3 Credits)

Analyze and develop critical intersections of building systems. Explain the relationship among systems. Identify the relationship between details and design intent.

## ARCH1231 | Building & the Environment | Lecture (3 Credits)

Analyze varying building systems, their relationship to climate change, their integration into buildings, and their standards for documentation. Develop skills for design and documentation of ecologically sustainable building systems.

## ARCH2111 | Construction Documents | Studio (5 Credits)

Create and develop building construction drawings and specification. Apply building regulations and codes to inform design development. Engage in collaborative building information management.

**Prerequisite(s):** ARCH1211

## ARCH2122 | Building Materials | Lecture (3 Credits)

Analyze varying building systems details, material selections, and their specification standards. Develop skills for detailing, documenting, and specifying building materials.

## ARCH2131 | Building Regulations | Lecture (3 Credits)

Examine the design implications of building regulations. Research building codes, zoning ordinances, and other regulatory factors. Explain the role of building regulations to public health. Analyze and apply building regulations to specific building conditions.

## ARCH2211 | Capstone | Studio (5 Credits)

Engage in the design process and communicate design intent through architectural representation and construction documentation.

**Prerequisite(s):** ARCH2111

## ARCH2221 | Portfolio | Lecture (3 Credits)

Create a curriculum vitae and portfolio of work suitable for entry into the profession and advancement in education. Expand professional behavior and communication skills.

## ARCH2231 | Building Economics | Lecture (3 Credits)

Analyze and create building construction cost estimation. Explain and model building life cycle costs. Identify the relationship between whole building costs and climate change.

## ARCH3023 | Community Practice | Lecture (3 Credits)

Community Practice explores the process by which research, communication, collaboration, and community engagement lead to understanding. Learning focuses on documentation, interpretation, programming and equitable design practices in support of the designer's role connecting community to design objectives.

## ARCH3110 | City & Site | Studio (5 Credits)

Apply the fundamental and experimental approaches to a rigorous design process. Apply design thinking at a city scale, through a non-polemic, iterative, multimedia approach.

## ARCH3120 | 2D Rendering | Lecture (3 Credits)

Research design thinking through 2D rendering methods. Explain the fundamentals of a design process, iteration, rigor, critical representation, and architectural communication.

## ARCH3130 | Early Global History of Architecture | Lecture (3 Credits)

Research and analyze architecture of the world throughout history. Examine the relationships between culture, geography, politics, race, and the ways in which they shape the built environment.

## ARCH3140 | Landscape | Seminar (1 Credit)

Explore how form can integrate with and grow from natural systems, as well as how natural systems can integrate into architectural works through legible, self-evident user interaction with processes and phenomena.

## ARCH3210 | Program & Society | Studio (5 Credits)

Research client, site and regulatory conditions to create a comprehensive architectural program. Utilize space planning strategies to create form. Use iterative design processes to evolve architectural thought. Expand design thinking and visualization skills toward the development of a complex architectural condition.

## ARCH3220 | 2D Fabrication | Lecture (3 Credits)

Analyze architectural order through 2D fabrication. Develop, fabricate, and present varying ordering systems through iteration, rigor, critical representation, and architectural communication.

## ARCH3230 | Late Global History of Architecture | Lecture (3 Credits)

Analyze the history and current context of modern architecture globally. Identify the societies and ideas that shape architecture history and theory. Examine the relationships between culture, geography, politics, race, and the ways in which they influence architectural thought and form.

## ARCH3240 | Material Studies | Seminar (1 Credit)

Investigate the value, geography, global history, ecological impact, and strength properties of conventional, novel, and experimental materiality. Develop propositional learning skills and the understanding of technology, nature and design through material.

## ARCH4014 | 4D Design | Seminar (1 Credit)

4D Design explores the language of design, user experience and interaction with motion, sounds and interfaces. Develop design solutions that are influenced by 2D and 3D principles.

**ARCH4110 | Research & Culture | Studio (5 Credits)**

Apply architectural research to design while engaging a real world client and project. Employ an inclusive and participatory design process through engagement with various community stakeholders. Examine the relationship of architecture to public process and community development.

**ARCH4120 | 3D Fabrication | Lecture (3 Credits)**

Apply analog and digital 3D fabrication techniques as a design and representation tool. Develop skills utilizing design thinking, ordering systems, and digital fabrication methodologies.

**ARCH4130 | Globalization & the Vernacular | Lecture (3 Credits)**

Identify distinctions between vernacular and formal architecture traditions around the globe. Elaborate on the tensions between the role of architecture in urban and rural landscapes, as well as the distinctions between city and country. Catalog global vs. local processes in the structure of the city and place making. Build vocabulary and make distinctions in terminology such as culture, diversity, equity, modernity, pre-modern, agricultural, rural.

**ARCH4140 | Urbanism | Seminar (1 Credit)**

Research and analyze ideas of urbanism and their relationship to architecture within a design process. Perform comparative analysis of the Twin Cities and other urban centers through a series of case studies.

**ARCH4210 | Fabrication | Studio (5 Credits)**

Design and fabricate for varying socio-economic, political, and cultural contexts through immersive learning. Acquire a depth of knowledge of varying cultures and human behaviors and how they manifest themselves architecturally. Engage in intensive, participatory, and prototyping processes.

**ARCH4220 | Moving Image & Animation | Lecture (3 Credits)**

Practice skills in still and moving architectural visualization as a design and representation tool. Develop new skills utilizing design thinking, story-telling, and rendering techniques.

**ARCH4230 | Metropolis & Activism | Lecture (3 Credits)**

Examine the structure of cities and human settlement. Analyze the bio-politics of the city through the lens of safety, equity, race, and social justice, and its effect on humanity and the environment. Explore changes in urbanism based on current cultural conditions.

**ARCH4240 | Parametric Design | Seminar (1 Credit)**

Analyze ideas of parametric design and their relationship to architecture and the design process. Perform exercises in varying ideas and processes of parametric design in architecture.

**ARCH5022 | Advanced Detailing | Lecture (3 Credits)**

Advanced Detailing enhances knowledge of architectural detailing, specifications, building assembly, and construction practices. Learning focuses on the documentation necessary to effectively implement and communicate design intent for construction.

**ARCH5110 | Integrative Design | Studio (5 Credits)**

Integrate site, regulatory, and program elements to create an architectural work. Demonstrate design intent within the design and development of building systems. Demonstrate integrative design through varying forms of architectural representation.

**Prerequisite(s):** ARCH4210, ARCH3210, ARCH3110, And ARCH4110

**ARCH5120 | Thesis Preparation | Lecture (3 Credits)**

Propose topics of architectural inquiry through peer-reviewed research. Investigate physical and digital modes of representation. Utilize physical and digital modes of representation, design thinking, ordering systems, and investigative skills to develop, represent, and propose a thesis.

**ARCH5130 | Systems & Envelope | Lecture (3 Credits)**

Research and analyze the building envelope and its performative relationship to building systems. Discover ways in which building systems are designed to reinforce architectural thought. Analyze works of architecture with a focus on integrative thinking.

**ARCH5140 | Entrepreneurship | Seminar (1 Credit)**

Investigate how architectural businesses form, grow, hire, and create sustainable business plans with lasting value. Analyze real world examples of how the profession of architecture fiscally operates in foundation, operation, capital investment, asset building, and liability management.

**ARCH5210 | Thesis | Studio (8 Credits)**

Design, develop, and present a provocation that defends a thesis. Demonstrate the power of architecture to creatively solve cultural, environmental, technological, or other substantive problems. Individual design philosophies, processes, self-discipline, autonomy, and time management skills are rigorously developed with an emphasis on iteration and personal evolution.

**Prerequisite(s):** ARCH5120

**ARCH5220 | Professional Practice | Lecture (3 Credits)**

Analyze the role of the architect in society as a leader, collaborator, and catalyst toward a better world. Examine the ethical, social, and legal responsibilities of professional practice. Describe the role of equity, diversity, and inclusion within the profession.

**ARCH5230 | Structures | Lecture (3 Credits)**

Analyze the principles of building structures through quantitative and mathematical means. Examine conventional, unconventional, and emerging structural systems. Explain the relationship between structural systems and design intent.

**ARCH5240 | Architectural Writing | Seminar (1 Credit)**

Engage in scholarly architectural writing. Discover the means and methods of architectural writing. Gain exposure to scholarly publication opportunities. Generate works which successfully hold up to peer review. Perform peer review for other generated works.